

## Optical Fiber Bragg Grating Thermal Compensating Device and Method for Manufacturing Same

### ABSTRACT

5        This invention discloses a plurality of compensating devices for correcting temperature deviation of optical fiber Bragg grating (FBG). These devices includes means for compressing optical fibers being affixed to a substrate, and fiber grids being cured to the substrate and/or the compressing means under a thermal state, or fiber grids being affixed to the substrate and/or the  
10        compressing means while the fiber grids are under tension. This invention further discloses methods for manufacturing such devices. The FBG thermal compensating devices according to this invention consist the advantages of simple constructions and simplified manufacturing processes. One of the devices can resolve the heat-dissipating problem so as to allow immediate  
15        thermal expansion of the fiber grids. Another device allows rapid positioning and manufacturing. One of the devices allows the fiber grids to be directly secured to a thermal compensating substrate without needing additional pre-processes.

20        During the manufacturing processes, AB thermally cured adhesive can be implemented to affix the fiber grids to the device under a thermal state so as to eliminate the implementation of pre-loading. The device can also be placed under a thermal state, after the process of thermal curing, for a pre-determined period of time so as to perform annealing to the fiber grids thereby further simplifying the manufacturing process.